REMARKS

Claims 21-40 are pending. The specification is objected to for having a non-descriptive title and improper wording in the Abstract. Claims 21, 22, 28, 32, and 39 are objected to for informalities. The drawings are objected to for failing to show every feature of the invention specified in the claims. Claims 21, 32, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Harrold, U.S. Patent 6,512,379 ("Harrold"). Claims 22-28, 30-31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrold in view of Khorrami 5,970,393 ("Khorrami"). Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrold and Khorrami in further view of Deegan, U.S. Patent 5,552,711 ("Deegan"). Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrold in view of Deegan. Claims 37 - 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrold and Deegan in further view of I.E.E.E. Interharmonic Task Force Publication entitled Interharmonics in Power Systems.

The title and abstract have been amended herein.

Claims 21, 22, 28, 32, and 39 have been amended to correct for informalities.

With regard to the objections to the drawings, applicant respectfully submits the reference potential feature cited as missing from the drawings is present in FIGS. 4 and 5. Specifically, the rotor shaft 3 and housing 2 are respective ground reference potentials as described on page 13, lines 1-5 of the specification. Accordingly, the applicant requests that the objection to the drawings be withdrawn.

With regard to the rejection of claim 21 under 35 U.S.C. 102(e), claim 21 has been amended to include the limitation of "a measuring element operating in a kilohertz frequency range for measuring an electric or magnetic field strength set up by a first charge distribution on the surface of the rotor blades or guide vanes resulting from charged particles being deposited on the surface by an ionized gas flowing over the surface, the first charge distribution generating a first emission in the kilohertz frequency range lower than a second emission generated in a gigahertz frequency range by a second charge distribution resulting from tribo-charging so that a processing requirement for measuring the first emission resulting from the deposited charged particles is less than a processing requirement for measuring the second emission resulting for

tribo-charging." In essence, claim 21 calls for a measurement device for measuring an emission generated by ionized gas deposited charges on blade or vane surfaces that are detected using lower frequency techniques than an emission generated by tribo-charging. Nothing in Harrold teaches or suggests these limitations.

In contrast to the present invention, Harrold describes detecting tribo-charging induced emissions from blade and vane surfaces as a result of friction between a gas flow and the surfaces. See, for example, Harrold, column 5, lines 36-40. Tribo-charging generated emissions are believed to occur at higher frequencies than emissions resulting from ionized gas deposited charges. Specifically, as described in the background of the present application on page 2 lines 25-30, tribo-charging results in radio frequency emissions in the gigahertz range, whereas ionized gas deposited charges result in radio frequency emissions in the kilohertz range, such as around 4.8 kilohertz. Consequently, it is believed that detection of tribo-charging induced emissions requires more complex, higher frequency processing techniques than is required for detecting emissions resulting from ionized gas deposited charges. By teaching a measurement system for detecting tribo-charging emissions, Harrold teaches away from a measurement element for detecting emissions resulting from ionized gas deposited charges that can be accomplished using simpler, lower frequency processing techniques. Accordingly, Harrold fails to support a rejection of claim 21 under 35 U.S.C. 102. Therefore, claim 21, and claims 22-31 depending therefrom, are believed to be in condition for allowance.

With regard to the rejection of claim 32 under 35 U.S.C. 102(e), claim 32 has been amended to include the limitations of "the first charge distribution resulting from charged particles being deposited on the surface by an ionized gas flowing over the surface, the first charge distribution generating a first emission in a kilohertz frequency range lower than a second emission generated in a gigahertz frequency range by a second charge distribution resulting from tribo-charging," and "measuring the electric or magnetic field strength by a measuring element in the kilohertz frequency range using a lower frequency processing technique for measuring the electric or magnetic field strength generated by the first emission compared to a higher frequency processing technique required for measuring the second emission in the gigahertz frequency range." In essence, claim 32 calls for measuring an emission generated by ionized gas deposited charges on blade or vane surfaces that are detected using lower frequency techniques than an emission generated by tribo-charging. Nothing in Harrold teaches or suggests these limitations.

In contrast to the present invention, Harrold describes detecting tribo-charging induced emissions from blade and vane surfaces as a result of friction between a gas flow and the surfaces. Tribo-charging generated emissions are believed to occur at higher frequencies than emissions generated by ionized gas deposited charges. Specifically, as described in the background of the present application on page 2 lines 25-30, tribo-charging results in radio frequency emissions in the gigahertz range, whereas ionized gas deposited charges result in radio frequency emissions in the kilohertz range, such as around 4.8 kilohertz. Consequently, it is believed that detection of tribo-charging induced emissions requires complex, higher frequency processing techniques than is required for detecting emissions resulting from ionized gas deposited charges. By teaching measuring tribo-charging emissions, Harrold teaches away from measuring emissions resulting from ionized gas deposited charges that can be accomplished using simpler, lower frequency processing techniques. Accordingly, Harrold fails to support a rejection of claim 32 under 35 U.S.C. 102. Therefore, claim 32, and claims 33-40 depending therefrom, are believed to be in condition for allowance.

Conclusion

The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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